SHASTA RED FIR SERIES

Abies magnifica shastensis

ABMAS

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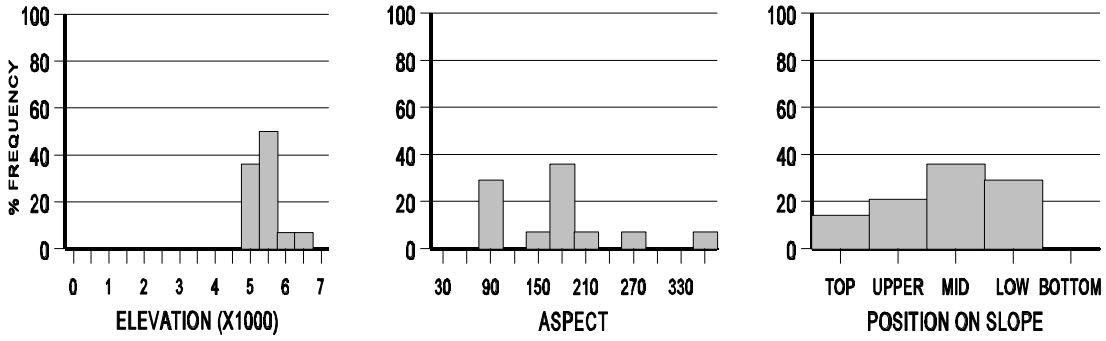
Shasta red fir (*Abies magnifica* A. Murr. var. *shastensis* Lemm.*)* is a variety of California red fir (*Abies magnifica* A. Murr.) that is found in southwest Oregon and northern California. It is interfertile with noble fir (*Abies procera* Rehd.) and California red fir. Morphological and genetic characteristics of the trio are similar, thus complicating identification in southwest Oregon. Populations north of the McKenzie River are recognizable as noble fir and south of Mt. Lassen as California red fir. Shasta red fir is generally found at high elevations where the climate is cool to cold and moist, however, it is able to tolerate summer dry spells common to the Mediterranean environment of southwest Oregon.

The Shasta Red Fir Series occurs in a narrow elevational band centered around 5700 feet. It is replaced by the White Fir Series at lower elevations and the Mountain Hemlock Series at higher elevations. The flowchart on page ABMAS 2 shows a graphical presentation of the classification and the relationships between plant associations in the Shasta Red Fir Series.

Elevation ranges from approximately 4000 feet to 6900 feet. All aspects are represented with fewer occurrences on the southwest and west. Slope can range from flat to very steep. Topographic position ranges from ridge tops to valley bottoms, but the Series is most frequently found between upper and lower one-third slope positions.



The Shasta Red Fir Series generally occurs in areas that are cool to cold and moist. Average annual temperature ranges from 37 degrees F to 44 degrees F, averaging 40 degrees F. Average annual precipitation varies between 35 inches and 120 inches and averages 60 inches. The relative environments of the plant associations are shown on page ABMAS 3. Each association is plotted by average annual temperature and average annual precipitation. Climate data is not available for Shasta Red Fir-White Fir/Creeping Snowberry/Common Prince's-pine and Shasta Red Fir-Mountain Hemlock/Pinemat Manzanita/Common Prince's-pine.

Parent material is highly variable, but most often is composed of igneous materials. Soils range from shallow to deep. Surface rock cover ranges from 5 to 38 percent,

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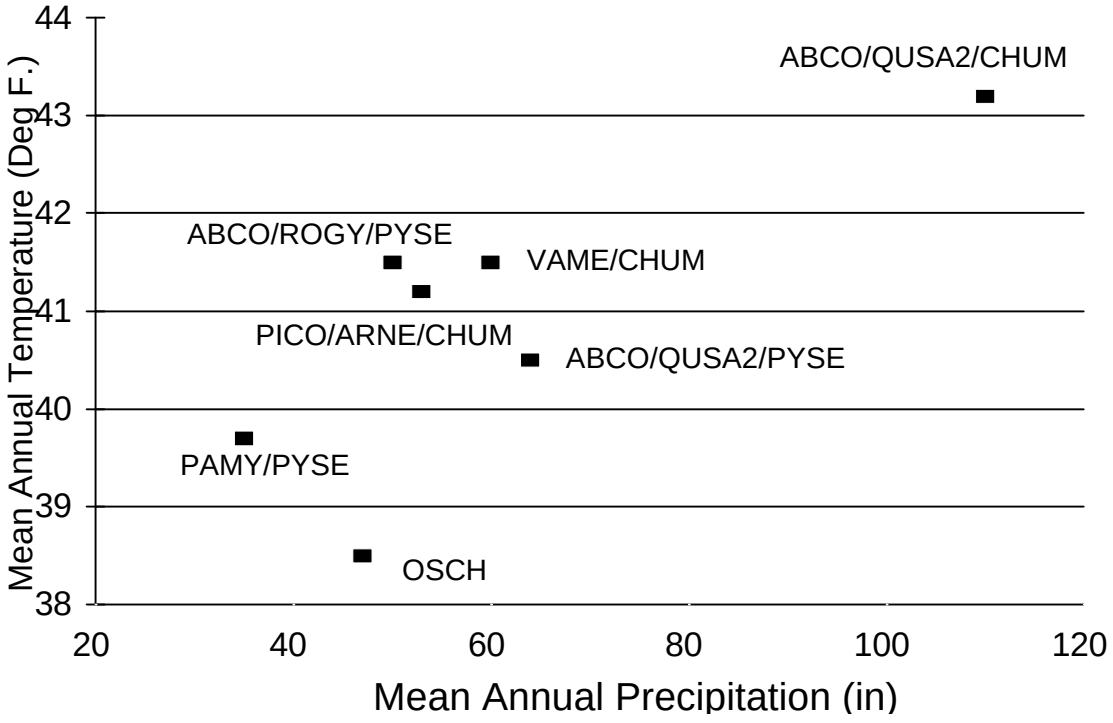

with an average of 15 percent. Surface gravel cover ranges from 3 to 18 percent, with an average of 8 percent. Exposed bedrock cover ranges from 0 to 2 percent , with an average of 1 percent. Bare ground ranges from 1 to 5 percent, with an average of 2 percent. Litter cover ranges from 50 to 99 percent, with an average of 84 percent. Moss cover ranges from 1 to 10 percent, with an average of 2 percent.

Shasta red fir is generally the dominant tree in the overstory of the Shasta Red Fir Series and is abundant in the understory. On warmer sites, white fir is present, and on cooler sites, mountain hemlock is present.

Total species richness (the number of species of vascular plants) is calculated for each association. The average total species richness for the Shasta Red Fir Series ranges from 15 to 34. Richness is rated as very low, 15 to 18 species; low, 19 to 22 species; intermediate, 23 to 26 species; high, 27 to 30 species; and very high, 31 to 34 species.

Estimates of total cover by vegetation layer were made for wildlife interpretations. Upper-layer tree cover ranges from 39 percent in Shasta Red Fir-Lodgepole Pine/ Pinemat Manzanita/Common Prince's-pine to 72 percent in Shasta Red Fir-White Fir/Sadler Oak/Common Prince's-pine and averages 58 percent for the Series. Mid-layer tree cover ranges from 25 to 47 percent and averages 34 percent. Lower layer tree cover ranges from 15 to 67 percent and averages 23 percent. High shrub cover ranges from 0 and 19 percent and averages 4 percent. Low shrub cover ranges from 6 to 48 percent and averages 18 percent. Herb/grass layer cover ranges from 6 to 45 percent and averages 30 percent.

Nine final plant associations have been identified for the Series in southwestern Oregon. They were described from 97 plots: 50 Forest Service plots, 33 Sky Lakes Wilderness plots, 8 Bureau of Land Management plots, and 6 Curry County Natural

Resources Conservation Service plots. The following shows the relationship of draft and final plant associations. The draft associations are listed, with final associations below, each in order of most to least common, with the percentage of plots that make up each association (refer to Methods section).

ABMAS-QUSA (N=16)
ABMAS-ABCO/QUSA2/PYSE (31%)
ABCO-ABMAS/QUSA2 (25%)
ABMAS-ABCO/QUSA2/CHUM (13%)
ABMAS-ABCO/ROGY/PYSE (13%)
TSME-ABMAS/RULA2/PYSE (13%)
ABMAS/OSCH (6%)

ABMAS/POPU (N=15)
ABMAS/OSCH (100%)

ABMAS/SYMO (N=8)
ABMAS/OSCH (50%)
ABCO-ABMAS/CHUM-ANDE3 (13%)
ABCO/BENE2 (13%)
ABMAS-ABCO/ROGY/PYSE (13%)
ABMAS-PICO/ARNE/CHUM (13%)

ABMAS/VAME (N=9)
ABMAS/VAME/CHUM (67%)
ABMAS-PICO/ARNE/CHUM (22%)
ABCO-ABMAS/CHUM-ANDE3 (11%)

KEY TO THE SHASTA RED FIR PLANT ASSOCIATIONS

1a.	Siskiyou Mountain Province.	2
1b.	Cascade Province. .	6
2a.	Douglas-fir (PSME) present in overstory and/or understory.	3
2b.	Douglas-fir (PSME) absent.	5
3a.	Pinemat manzanita (ARNE) present.	ABMAS/OSCH Page ABMAS 8
3b.	Pinemat manzanita (ARNE) absent. If present, Sadler oak (QUSA2) also present.	4
4a.	Baldhip rose (ROGY), one-sided pyrola (PYSE), and rattlesnake-plantain (GOOB2) present.	ABMAS-ABCO/ROGY/PYSE Page ABMAS 10
4b.	At least one of the following absent: baldhip rose (ROGY), one-sided pyrola (PYSE), or rattlesnake-plantain (GOOB2).	ABMAS-ABCO/QUSA2/CHUM Page ABMAS 12
5a.	Sadler oak (QUSA2) and western false Solomon’s-seal (SMRA) present.	ABMAS-ABCO/QUSA2/PYSE Page ABMAS 14
5b.	Sadler oak (QUSA2) and/or western false Solomon’s-seal (SMRA) absent.	ABMAS/OSCH Page ABMAS 8
6a.	White fir (ABCO) present.	7
6b.	White fir (ABCO) absent.	13
7a.	Lodgepole pine (PICO) present.	8
7b.	Lodgepole pine (PICO) absent.	15

8a.	Pinemat manzanita (ARNE) present.	9
8b.	Pinemat manzanita (ARNE) absent.	ABMAS-ABCO/SYMO/CHUM Page ABMAS 16
9a.	Woods strawberry (FRVEB3) present.	10
9b.	Woods strawberry (FRVEB3) absent.	11
10a.	Dwarf bramble (RULA2) present.	ABMAS/VAME/CHUM Page ABMAS 18
10b.	Dwarf bramble (RULA2) absent.	ABMAS-PICO/ARNE/CHUM Page ABMAS 20
11a.	Long stolon sedge (CAPE6) present.	ABMAS-TSME/ARNE/CHUM Page ABMAS 22
11b.	Long stolon sedge (CAPE6) absent.	12
12a.	Oregon boxwood (PAMY) present.	ABMAS-PICO/ARNE/CHUM Page ABMAS 20
12b.	Oregon boxwood (PAMY) absent.	ABMAS-TSME/ARNE/CHUM Page ABMAS 22
13a.	Mountain hemlock (TSME) present.	14
13b.	Mountain hemlock (TSME) absent.	ABMAS/PAMY/PYSE Page ABMAS 24
14a.	Queen’s cup (CLUN2) and white-flowered hawkweed (HIAL2) present.	ABMAS/VAME/CHUM Page ABMAS 18
14b.	Queen’s cup (CLUN2) and/or white-flowered hawkweed (HIAL2) absent.	ABMAS-TSME/ARNE/CHUM Page ABMAS 22
15a.	Mountain hemlock (TSME) present.	16

15b. Mountain hemlock (TSME) absent. 18

ABMAS 7

16a. Dwarf bramble (RULA2) present. ABMAS/VAME/CHUM
Page ABMAS 18

16b. Dwarf bramble (RULA2) absent. 17

17a. Threeleaf anemone (ANDE3) and rattlesnake-plantain (GOOB2) present. ABMAS-ABCO/SYMO/CHUM
Page ABMAS 16

17b. Threeleaf anemone (ANDE3) and/or rattlesnake-plantain (GOOB2) absent. ABMAS/VAME/CHUM
Page ABMAS 18

18a. Dwarf bramble (RULA2) present. ABMAS/VAME/CHUM
Page ABMAS 18

18b. Dwarf bramble (RULA2) absent. ABMAS-ABCO/SYMO/CHUM
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